

The Relation Between Hospital Experience and In-Hospital Mortality for Patients With AIDS-Related PCP

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There is marked debate by physicians and policymakers regarding the creation of regionalized acquired immunodeficiency syndrome (AIDS) centers. A central issue is whether outcomes of care, particularly mortality, differ as a function of hospital experience with patients with AIDS. We evaluated the experience of 257 patients with AIDS and *Pneumocystis carinii* pneumonia treated at 15 California hospitals between October 1986 and October 1987. An overall 15.2% in-hospital mortality rate was observed. However, a markedly lower in-hospital mortality rate was observed in the group of patients treated at hospitals that had a high level of experience with patients with AIDS (≥ 30 human immunodeficiency virus-related discharges per 10 000 hospital discharges) relative to the group treated at hospitals with less experience (< 30 human immunodeficiency virus-related discharges per 10 000 hospital discharges): 12% vs 33%. Other factors significantly associated with in-hospital mortality included intensive care unit use, admission from an emergency department or through an interhospital transfer, and a history of hospitalizations. A logistic regression model indicated that, after controlling for severity indicators, AIDS experience remained significantly related to mortality. Our findings suggest that policymakers should consider three options: creating regional AIDS centers, implementing policies that promote a rapid but carefully monitored increase in experience of low-volume hospitals with human immunodeficiency virus-infected individuals, or providing highly focused educational efforts at low-AIDS-experience facilities. Without such policy initiatives, differences in mortality rates like those we have found might persist as cases of AIDS begin to occur in every area of the country.

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CARE FOR patients with acquired immunodeficiency syndrome (AIDS), including those with *Pneumocystis carinii* pneumonia (PCP), is now concentrated in a few cities in the United States and within certain hospitals in these cities. As cases of AIDS begin to occur across the country, there is debate whether increased regional support by federal, state, and local governments for specific AIDS centers is an

alternative to the natural diffusion of AIDS care into local hospitals.

This study focuses on one aspect of the debate over care of patients with AIDS by addressing the following issue: Are patients with AIDS who have a diagnosis of PCP infection more likely to be discharged alive when they are treated at hospitals that have a high familiarity with patients with AIDS compared with patients treated

at hospitals with low familiarity? We have selected PCP because it is a serious complication of AIDS that often leads to death and, unlike many other complications of AIDS, because it is amenable to therapies that are available currently. Patients with AIDS and PCP infection pose difficult diagnostic and therapeutic dilemmas for health care workers, such as diagnosing additional life-threatening opportunistic infections besides PCP. Therapy also is difficult because of the high incidence of severe toxic reactions to anti-PCP therapies in patients with severely compromised hematologic and immunologic systems.¹

For editorial comment see p 3016.

There is some evidence that experience in treating a disease might be an important factor in minimizing adverse patient outcomes. Previous studies have shown that hospitals that provide care for large numbers of patients receiving specific surgical procedures (such as open heart surgery, vascular surgery, transurethral resection of the prostate, and coronary artery bypass) experience lower in-hospital mortality rates relative to hospitals that perform these procedures in fewer patients.² Few studies have addressed the relationship of hospital volume to in-hospital mortality for medical conditions. These studies have evaluated patients with diseases such as acute myocardial infarction, peptic ulcer disease, subarachnoid hemorrhage, and burns.³⁻⁷ One study focused on the relationship between hospital volume and mortality in patients with short-term heart disease; no relationship was found.³

Other researchers have attributed differences in in-hospital mortality rates to one of two causes: (1) hospitals with low mortality rates are further

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